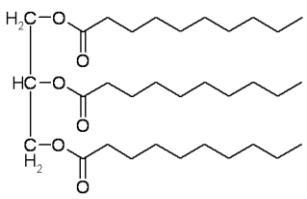
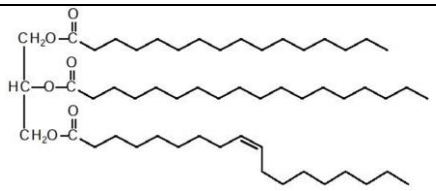
HOMEWORK #9

CHEM 121, section 1 Winter 2015 **Printed Name:** _____
Background for the Chapter. 19. Lipids
Homework Feb* 11, *2015 by 12:15 PM! **Group Name:** _____

1) (3 pts) Give names of the following types of lipids.



a) Name:_____



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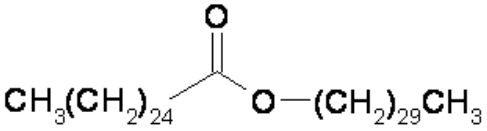

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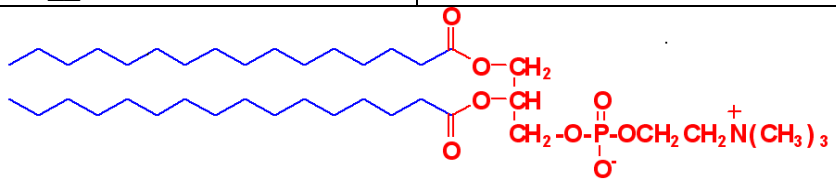

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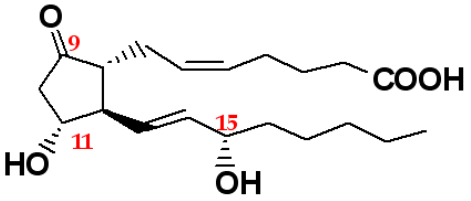

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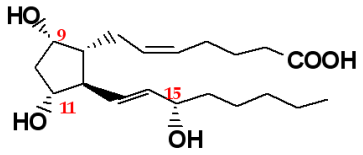

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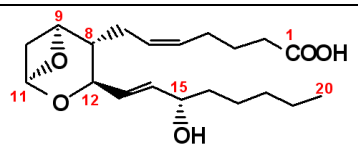
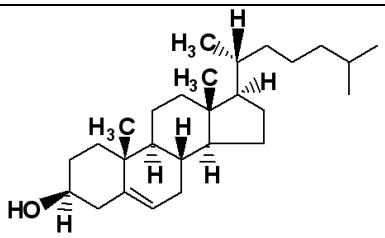
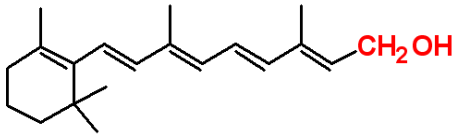


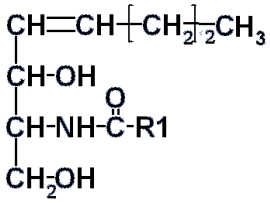
g) Name:_____



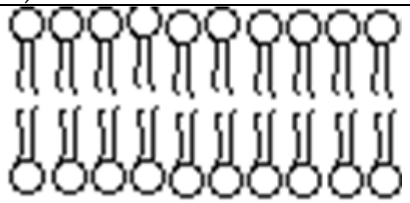
h) Name:_____



i) Name:_____



j) Name:_____



k) Name:_____

2) (3 pts) Give the type, structure notation and names of the following fatty acids.

$CH_3(CH_2)_{10}CO_2H$ a)_____	$CH_3(CH_2)_{18}CO_2H$ a)_____	$CH_3(CH_2)_{16}CO_2H$ a)_____	$CH_3(CH_2)_{14}CO_2H$ a)_____
$CH_3(CH_2)_5CH{=}CH(CH_2)_7CO_2H$ a)_____	$CH_3(CH_2CH{=}CH)_3(CH_2)_7CO_2H$ a)_____	$CH_3(CH_2)_7CH{=}CH(CH_2)_7CO_2H$ a)_____	

3) (3 pts) Draw the condensed structures of each of the following fatty acids:

a. Decanoic acid b. Stearic acid

c. trans-5-Decenoic acid d. cis-5-Decenoic acid

4) (3 pts)Write an equation for each of the following reactions:

a) Esterification of glycerol with three molecules of myristic acid

b) Base (NaOH) hydrolysis or saponification of glyceryl tristearate

c) Reaction of decanoic acid with KOH

d) Hydrogenation of linoleic acid

5) (2 pts) What are the structural differences between triglycerides (triacylglycerols) and phospholipids? Where they are found in living organisms?

6) (2 pts) What is a sphingolipid? Draw an example.

7) (2 pts) What is a steroid? What are their applications?

8) (2 pts) What are the two major types of fat substitutes and how they work?